

CLAIM AMENDMENTS

What is claimed is:

- 1 1. (currently amended) A method of providing sets of network addresses for dynamically
2 configuring hosts on a network, the method comprising the computer-implemented steps
3 of:
4 assigning one or more subnets of a given size to a pool of available subnets;
5 sending a first request from a first host for a first count of network addresses for a first set
6 of network addresses for dynamically configuring hosts on the network;
7 determining if there are available network addresses in a pool of available addresses and
8 if not then selecting a first subnet from the pool of available subnets and adding
9 said selected first subnet's network addresses to said pool of available addresses;
10 receiving a first message indicating the first set of network addresses;
11 receiving a second message from a second host requesting a second count of network
12 addresses for a second set of network addresses for dynamically configuring hosts
13 on the network;
14 determining the second set of network addresses based at least in part on the first set of
15 network addresses and the second count; and
16 sending a first response indicating the second set of network addresses.
- 1 2. (original) A method as recited in Claim 1, further comprising:
2 receiving, from a first host on the network, a third message requesting a network address;
3 and
4 sending, to the first host in response to the second message, a second response offering a
5 first network address based on the first set of network addresses and the second
6 set of network addresses.
- 1 3. (original) A method as recited in Claim 2, wherein the first set includes the first network
2 address and the second set does not include the first network address.

1 4. (original) A method as recited in Claim 1, further comprising receiving from a network
2 administrator a third message indicating a third set of network addresses for dynamically
3 configuring hosts on the network.

1 5. (currently amended) A method as recited in Claim 1, further comprising determining
2 usage of the first set of network addresses wherein the usage comprises a proportion of a number
3 of network addresses used compared to a total number of addresses in the first set.

1 6. (original) A method as recited in Claim 5, further comprising reporting the usage of the
2 first set of network addresses.

1 7. (original) A method as recited in Claim 5, said step of determining the second set of
2 network addresses is further based at least in part on the usage of the first set of network
3 addresses.

1 8. (original) A method as recited in Claim 5, wherein:
2 the first message further indicates a first time interval for use of the first set; and
3 the method further comprises sending, before the first time interval expires, a second
4 request for renewal of use of the first set; and
5 the second request includes data indicating the usage of the first set.

1 9. (currently amended) A method as recited in Claim 1 further comprising the computer-
2 implemented steps of:
3 receiving a third message for renewal of use of the second set, the third message
4 including data indicating the usage of the second set,
5 determining a third set of network addresses for dynamically configuring hosts on the
6 network based on the second set and the usage of the second set wherein the
7 usage is determined in part based on a number of network addresses used in a
8 local table of leased network addresses for subnets used; and
9 sending a second response indicating the second set of network addresses.

1 10. (original) A method as recited in Claim 1, wherein each set of the first set and the second
2 set is indicated by a base address and a number indicating a range of addresses above the base
3 address.

1 11. (original) A method as recited in Claim 10, wherein the number indicating the range is a
2 mask that indicates a number of most significant bits in the base address that are constant over
3 the range.

1 12. (original) A method as recited in Claim 1, wherein the second set is empty.

1 13. (original) A method as recited in Claim 1, wherein the second set is the same as the first
2 set.

1 14. (original) A method as recited in Claim 1, wherein the hosts on the network include
2 interfaces on a router on the network.

1 15. (original) A method as recited in Claim 1, further comprising:
2 receiving, from a router on the network, a third message requesting a third count of
3 network addresses for a third set of network addresses for configuring interfaces
4 on the router;
5 determining the third set of network addresses based at least in part on the first set of
6 network addresses, the second set of network addresses, and the third count; and
7 sending, to the router in response to the third message, a second response indicating the
8 third set of network addresses.

1 16. (original) A method as recited in Claim 1, wherein:
2 the first message received includes data indicating that a first server should send a third
3 set of network addresses for dynamically configuring hosts on the network; and
4 the method further comprises sending, in response to the data indicating that the first
5 server should send the third set, a second request for the third set of network
6 addresses.

1 17. (original) A method as recited in Claim 16, further comprising receiving, from the first
2 server in response to the second request, a third message indicating the third set of network
3 addresses.

1 18. (original) A method as recited in Claim 1, further comprising:
2 determining that a third set of network addresses should be sent based at least in part on
3 the first set and the second set; and
4 inserting into the first response data indicating that a third set of network addresses for
5 dynamically configuring hosts on the network should be sent.

1 19. (currently amended) A method as recited in Claim 18, wherein:
2 the method further comprises determining usage of the first set of network addresses
3 wherein the usage is determined in part based on a number of network addresses
4 used in a local table of leased network addresses for subnets used; and
5 said step of determining that a third set of network addresses should be sent is based at
6 least in part on the usage of the first set.

1 20. (original) A method as recited in Claim 18, further comprising receiving, in response to
2 the data indicating that the third set of network addresses should be sent, a third message
3 requesting the third set of network addresses.

1 21. (currently amended) A method of providing sets of network addresses for dynamically
2 configuring hosts on a network, the method comprising the computer-implemented steps of:
3 receiving, from a first server on the network, a first message indicating a first set of
4 network addresses for dynamically configuring hosts on the network and a first
5 time interval for use of the first set, wherein the first set is selected from a first
6 subnet's available network addresses in a pool of available address;
7 determining usage of the first set of network addresses wherein the usage is determined in
8 part based on a number of network addresses used in a local table of leased
9 network addresses for subnets used; and
10 sending, to the first server before the first time interval expires, a second request for
11 renewal of use of the first set,

12 wherein the second request includes data indicating the usage of the first set.

1 22. (currently amended) A method of providing sets of network addresses for dynamically
2 configuring hosts on a network, the method comprising the computer-implemented steps of:
3 sending, to a first server on the network, a first message indicating a first set of network
4 addresses for dynamically configuring hosts on the network and a first time
5 interval for use of the first set, wherein the first set is selected from a first subnet's
6 available network addresses in a pool of available address;
7 receiving, from the first server before the first time interval expires, a request for renewal
8 of use of the first set, the request including data indicating the usage of the first
9 set wherein the usage is determined in part based on a number of network
10 addresses used in the local table of leased network addresses for subnets used;
11 determining a second set of network addresses for dynamically configuring hosts on the
12 network based on the first set and the usage of the first set; and
13 sending to the first server a second message indicating the second set of network
14 addresses.

1 23. (currently amended) A method ~~of providing sets of network addresses for dynamically~~
2 ~~configuring hosts on a network, the method as provided in Claim 1 further~~ comprising the
3 computer-implemented steps of:
4 ~~sending, to a first server, a first request for a first count of network addresses for a first~~
5 ~~set of network addresses for dynamically configuring hosts on the network;~~
6 receiving, from the first server in response to the first request, a first message including
7 first data indicating the first set of network addresses and second data indicating
8 that the first server should send a second set of network addresses for dynamically
9 configuring hosts on the network; and
10 sending, to the first server in response to the data indicating that the first server should
11 send the second set, a second request for the second set of network addresses.

1 24. (original) A method of providing sets of network addresses for dynamically configuring
2 hosts on a network, the method comprising the computer-implemented steps of:
3 receiving, from a first server, a first request for a first count of network addresses for a
4 first set of network addresses for dynamically configuring hosts on the network,
5 wherein the first set is selected from a first subnet's available network addresses
6 in a pool of available address;
7 determining usage of a second set of network addresses for dynamically configuring
8 hosts on the network wherein the usage is determined in part based on a number
9 of network addresses used in the local table of leased network addresses for
10 subnets used;
11 determining the first set of network addresses based at least in part on the first count and
12 the usage of the second set;
13 determining a third set of network addresses for dynamically configuring hosts on the
14 network based at least in part on the first set and the usage of the second set; and
15 sending, to the first server in response to the first request, a first message including first
16 data indicating the first set of network addresses and second data indicating that a
17 third set of network addresses should be sent.

1 25. (original) A computer-readable medium carrying one or more sequences of instructions
2 for providing sets of network addresses for dynamically configuring hosts on a network,
3 which instructions, when executed by one or more processors, cause the one or more
4 processors to carry out the steps of:
5 assigning one or more subnets of a given size to a pool of available subnets;
6 sending a first request from a first host for a first count of network addresses for a first set
7 of network addresses for dynamically configuring hosts on the network;
8 determining if there are available network addresses in a pool of available addresses and
9 if not then selecting a first subnet from the pool of available subnets and adding
10 said selected first subnet's network addresses to said pool of available addresses;
11 receiving, in response to the first request, a first message indicating the first set of
12 network addresses;

13 receiving a second message from a second host requesting a second count of network
14 addresses for a second set of network addresses for dynamically configuring hosts
15 on the network;
16 determining the second set of network addresses based at least in part on the first set of
17 network addresses and the second count; and
18 sending, in response to the second message, a first response indicating the second set of
19 network addresses.

1 26. (original) An apparatus for providing sets of network addresses for dynamically
2 configuring hosts on a network, comprising:
3 means for assigning one or more subnets of a given size to a pool of available subnets;
4 means for sending a first request from a first host for a first count of network addresses
5 for a first set of network addresses for dynamically configuring hosts on the
6 network;
7 means for determining if there are available network addresses in a pool of available
8 addresses and if not then selecting a first subnet from the pool of available subnets
9 and adding said selected first subnet's network addresses to said pool of available
10 addresses;
11 means for receiving, in response to the first request, a first message indicating the first set
12 of network addresses;
13 means for receiving a second message from a second host requesting a second count of
14 network addresses for a second set of network addresses for dynamically
15 configuring hosts on the network;
16 means for determining the second set of network addresses based at least in part on the
17 first set of network addresses and the second count; and
18 means for sending, in response to the second message, a first response indicating the
19 second set of network addresses.

1 27. (original) An apparatus for providing sets of network addresses for dynamically
2 configuring hosts on a network, comprising:
3 a network interface that is coupled to the network for sending and receiving one or more
4 packet flows therefrom;
5 a processor; and

6 one or more stored sequences of instructions which, when executed by the processor,
7 cause the processor to carry out the steps of:
8 assigning one or more subnets of a given size to a pool of available subnets;
9 sending a first request from a first host for a first count of network addresses for a
10 first set of network addresses for dynamically configuring hosts on the
11 network;
12 determining if there are available network addresses in a pool of available
13 addresses and not any then selecting a first subnet from the pool of
14 available subnets and adding said selected first subnet's network addresses
15 to said pool of available addresses;
16 receiving, in response to the first request, a first message indicating the first set of
17 network addresses;
18 receiving a second message from a second host requesting a second count of
19 network addresses for a second set of network addresses for dynamically
20 configuring hosts on the network;
21 determining the second set of network addresses based at least in part on the first
22 set of network addresses and the second count; and
23 sending, in response to the second message, a first response indicating the second
24 set of network addresses.

1 28. (original) A method as recited in Claim 1, wherein the second message includes data
2 indicating that a requesting device that issued the second message does not make
3 assignments of individual network addresses from among the second set of network
4 addresses such that all future requests for such assignments will be relayed back.

1 29. (original) A method as recited in Claim 1, wherein the second message includes data
2 indicating that a requesting DHCP server should free the second set of network addresses
3 as soon as possible by making no new assignments of addresses or subnets therefrom.

1 30. (original) A method as recited in Claim 1, wherein the second message includes data
2 indicating that a requesting DHCP server should discontinue use of the second set of
3 network addresses when all addresses in the subnet are unassigned.

- 1 31. (original) A method of providing subnets of network addresses for dynamically
2 configuring hosts on a network using the dynamic host control protocol (DHCP), the
3 method comprising the computer-implemented steps of:
4 sending a first DHCP request for a first count of network addresses for a first subnet of
5 network addresses for dynamically configuring hosts on the network;
6 receiving a first DHCP message indicating the first subnet;
7 receiving a second DHCP message requesting a second count of network addresses for a
8 second subnet of network addresses for dynamically configuring hosts on the
9 network;
10 determining the second subnet based at least in part on the first set of network addresses,
11 the second count, and a pool of available subnets; and
12 sending a first DHCP response indicating the second subnet.